

UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK

H. CRISTINA CHEN-OSTER; LISA PARISI; and  
SHANNA ORLICH,

Plaintiffs,

vs.

GOLDMAN, SACHS & CO. and THE GOLDMAN  
SACHS GROUP, INC.

Defendants.

10 Civ. 6950 (AT) (JCF)

**DEFENDANTS' MEMORANDUM OF LAW IN SUPPORT OF MOTION TO STRIKE  
REPORTS, OPINION, AND ANY TESTIMONY  
OF PLAINTIFFS' EXPERT DR. HENRY S. FARBER**

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The class action device exists in order to “promot[e] efficiency and economy of litigation.” *Crown, Cork & Seal Co. v. Parker*, 462 U.S. 345, 349 (1983). Where the “proposed class[] [is] sufficiently cohesive to warrant adjudication by representation,”<sup>1</sup> this mode of litigation “permit[s] an issue potentially affecting every [class member] to be litigated” at once, “sav[ing] the resources of both the courts and the parties.” *Califano v. Yamasaki*, 442 U.S. 682, 700-01 (1979).

In an effort to show that cohesion here — that the women working for Goldman Sachs across the putative class have experienced similar outcomes from Goldman Sachs’ performance evaluation, pay, and promotion processes — Plaintiffs rely on statistical studies performed by their retained expert, Dr. Henry S. Farber. Dr. Farber’s studies, however, are not admissible because they fail to meet the “exacting standards of reliability”<sup>2</sup> set by the Federal Rules of Evidence and the Supreme Court’s decision in *Daubert v. Merrell Dow Pharm., Inc.*<sup>3</sup> To meet these standards for admissibility, Plaintiffs must establish<sup>4</sup> (1) that Dr. Farber’s opinions are “the product of reliable principles and methods,”<sup>5</sup> (2) that he “employ[ed] in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field”<sup>6</sup>; and

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<sup>1</sup> *Amchem Prods., Inc. v. Windsor*, 6521 U.S. 591, 623 (1997).

<sup>2</sup> *Weisgram v. Marley Co.*, 528 U.S. 440, 455 (2000).

<sup>3</sup> *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 589 (1993).

<sup>4</sup> *U.S. v. Williams*, 506 F.3d 151, 160 (2d Cir. 2007) (“the proponent of expert testimony has the burden of establishing by a preponderance of the evidence that the admissibility requirements of Rule 702 are satisfied”).

<sup>5</sup> *Nimely v. City of New York*, 414 F.3d 381, 396 (2d Cir.2005), (quoting *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999)).

<sup>6</sup> *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 152 (1999); *Wills v. Amerada Hess Corp.*, 379 F.3d 32, 48 (2d Cir. 2004) (same).

(3) that he applied these rigorous scientific “principles and methods to the facts of the case.”

Fed.R.Evid. 702. Plaintiffs cannot make that showing:

- Dr. Farber made no real effort to understand the undisputed facts about the employment processes he purports to study (he merely “skimmed” the record evidence).
- For this reason (and others, explained below), his studies incorporate irrelevant factors and fail to account for many of the factors that play a part in employee performance ratings, compensation, and promotions at Goldman Sachs as established by *undisputed* testimony. These omitted factors constitute the “legitimate criteria that affect the decision making process[es]”<sup>7</sup> at Goldman Sachs, and without them his studies are “essentially worthless.”<sup>8</sup>
- Dr. Farber combines for analysis all of the Goldman Sachs Divisions in this case on the bald, untested and demonstrably false *assumption* that differences within the population (including those relating to the kinds of work the employees perform and the profitability of the businesses in which they work) are irrelevant to the compensation and promotional opportunities available to those employees.
- Dr. Farber’s aggregation of data from these disparate businesses fails the standard statistical test for validating such aggregation, and results in studies that squarely evade the single relevant question for the Court to answer at this stage of this proceeding: whether the processes he studied produce a *common* pattern of results for women across the putative class. Dr. Farber explicitly admitted at his deposition that he “didn’t want to be involved” in answering that question, and so he didn’t.

As a result, Dr. Farber’s opinions are so incomplete, unreliable and misconceived that they are irrelevant to any class certification motion question and thus inadmissible.

## **I. UNDISPUTED FACTS**

Dr. Farber presents studies of alleged gender differences resulting from two separate performance evaluation methods used at Goldman Sachs — the 360-degree performance review and the “Manager Quartile” process. He also performs an analysis of alleged gender differences in compensation earned by members of the putative class. Finally, he produces a limited study

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<sup>7</sup> *Bickerstaff v. Vassar Coll.*, 196 F.3d 435, 449 (2d Cir. 1999).

<sup>8</sup> *Freeland v. AT&T Corp.*, 238 F.R.D. 130 (S.D.N.Y. 2006).

of promotion rates from Vice President to Extended Managing Director (“EMD”) for a portion of the putative class period (2004-2008). We briefly explain those processes below.

**A. Performance Evaluations**

360-degree performance review: Each year, every Goldman Sachs employee participates in a multi-level feedback process called the 360-degree performance review. Employees perform a self-evaluation and identify 8-12 evaluators — subordinates, peers, more senior colleagues, and internal clients — with whom he or she has recently worked.<sup>9</sup> These reviewers then evaluate the employee on a numerical scale across a range of topics.<sup>10</sup> Each rater is also asked to provide narrative commentary on areas of strength and future development, among other things.<sup>11</sup> The reviewers provide this feedback independent of one another, as one of the primary purposes of the process is to get a wide range of perspectives on the rated employee’s performance (hence the name “360”). *See* Brown Decl. Ex. 4 (Deposition of David Landman, September, 5, 2013) at 57:22-58:2.

Manager Quartile: After the 360 review process is complete, supervising managers conduct their own performance evaluation of each of their direct reports. *See* Brown Decl. Ex. 3 at 316:15-18. Employees are assigned to numerical “buckets” or “quartiles,” with the first quartile containing the highest rated employees. *Id.* at 317:10-12; Brown Decl. Ex. 7 at 84:25-

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<sup>9</sup> *See* Declaration of Barbara B. Brown (“Brown Decl.”) at Exhibit 4 (Deposition of David Landman, September 5, 2013 at 64:12-16; *See* Brown Decl. Ex. 12C.

<sup>10</sup> The 360 review criteria have evolved over time and, during the putative class period, each of the Divisions has had the flexibility to add Division-specific criteria and to provide business-specific definitions for the ratings criteria. *See* Brown Decl. Ex. 7 at 282:5-21. Broadly, however, the reviews focus on areas such as “Technical Skills,” “Communication Skills,” “Teamwork,” “Leadership” and “Diversity and Equitable Treatment.” *See* Brown Decl. Ex. 3 at 307:2-8; Brown Decl. Ex. 12H.

<sup>11</sup> *See* Brown Decl. Ex. 12C, Brown Decl. Ex. 12A, and Brown Decl. Ex. 12B.

85:2; Brown Decl. Ex. 12E; Brown Decl. Ex. 12D. In assigning their direct reports to these quartiles, managers consider and weigh, based on their own judgment, a number of factors, including the scores and narrative feedback from the 360 review process, diversity and citizenship-related activities, and the employee's long-term commercial contribution and potential to assume greater responsibility in the future, as well as any other information the manager deems relevant.<sup>12</sup>

After the individual managers have made their quartile decisions, the managers within each Business Unit meet to discuss their respective recommendations in an effort to reach consensus. *See* Brown Decl. Ex. 7 at 84:23-86:15. To ensure that all of the employees do not end up at the top of the scale, managers within the Business Unit are provided with an approximate distribution goal — 25% of employees in the first quartile, 25% (or sometimes 50%) in the next grouping, and 25% (or sub-sets of 15% and 10%) in the last grouping.<sup>13</sup>

## **B. Compensation**

The process of determining compensation typically begins towards the end of the Firm's fiscal year (which, since 2009, has been the calendar year), when an aggregate compensation bonus pool is determined for each Division. *See* Brown Decl. Ex. 3 at 58:21-25; Brown Decl. Ex. 12F; Brown Decl. Ex. 12G. The size of the pool is based on the profitability of the Firm and of the Division itself. *See* Brown Decl. Ex. 6 at 144:14-22. Division leaders determine what portion of the Divisional bonus pool to allocate to each Business Unit within the Division. *See* Brown Decl. Ex. 12F; Brown Decl. Ex. 12G. The Business Unit allocations are based on the Business Units' relative performance and contribution to the Division during the year. *See*

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<sup>12</sup> *See* Brown Decl. Ex. 12I; Brown Decl. Ex. 12D.

<sup>13</sup> *See* Brown Decl. Ex. 3 at 317:10-24; Brown Decl. Ex. 7 at 84:25-85:2; Brown Decl. Ex. 12E; Brown Decl. Ex. 12D.

Brown Decl. Ex. 3 at 58:21-25. Managers of individual Business Units, and sometimes departments and desks within a Business Unit, then make compensation recommendations for their employees. *Id.* at 58:1-9; *See* Brown Decl. Ex. 5 at 61:10-19.

The money available for each Business Unit manager to allocate to his or her subordinates varies from year to year because the financial performance of each Business Unit varies, sometimes dramatically, depending on market conditions and other factors. *See* Brown Decl. Ex. 3 at 58:21-25. The bonus pool that one Business Unit receives in a particular year may differ significantly from what it was given in the prior year, and may also vary substantially from the pool other Business Units receive, even within the same Division. *See* Brown Decl. Ex. 6 at 59:8-12, 147:16-19; Brown Decl. Ex. 3 at 58:21-25.

This means that an employee in a Business Unit that had a very successful year would be expected to receive a larger bonus than an employee in a less successful Business Unit, even if the two individual employees performed comparably and all other factors impacting pay remained the same. *See* Brown Decl. Ex. 7 at 71:23-72:19. Employees *within* a Business Unit compete with each other for the finite dollars available in that Business Unit's bonus pool, but they do not compete for dollars with employees in *other* Business Units, who are paid from separate bonus pools. *Id.* at 85:22-86:2, 111:2-5; Brown Decl. Ex. 5 at 204:4-15.

Compensation is not driven in any formulaic way by the 360 review or Manager Quartile placement; rather, compensation is based on an overall assessment of employee contribution, particularly contribution to the financial success of the department, Business Unit, Division and Firm (Brown Decl. Ex. 1 at 295:10-16), and the competitive market for the employee's specific role. *See* Brown Decl. Ex. 7 at 392:15-393:10. For certain positions, individual production

metrics — for example profit and loss results for traders and sales credits for salespeople in Securities — weigh heavily in the compensation decision. *Id.* at 74:25-78:8; 137:9-138:16

### **C. Promotions**

Any Managing Director in the Firm is able to nominate any Vice President for promotion to EMD. *See* Brown Decl. Ex. 3 at 432:16-20; Brown Decl. Ex. 5 at 300:24-301:2. After nominations are closed, leaders in each Division meet with professionals in the Human Capital Management Division to narrow the nominations list to a manageable number of candidates. *See* Brown Decl. Ex. 7 at 205:18-23, 234:1-3; Brown Decl. Ex. 5 at 227:16-21; Brown Decl. Ex. 3 at 419:7-24.

These Divisional lists are then used as the basis for a candidate-vetting process known as “cross-ruffing.” *See* Brown Decl. Ex. 5 at 229:10-15. Cross-ruffing teams are designated within each Division. *See* Brown Decl. Ex. 5 at 240:15-21; Brown Decl. Ex. 7 at 212:7-9; Brown Decl. Ex. 3 at 398:25-399:5. The cross-ruffing team member responsible for that candidate conducts between 10 and 15 interviews to determine that candidate’s readiness for promotion. *See* Brown Decl. Ex. 7 at 215: 7-9, 218:15-19; Brown Decl. Ex. 3 at 434:15-20. Based on these interviews, the cross-ruffing teams compose a rank-ordered list of the candidates. *See* Brown Decl. Ex. 7 at 226:14-16; Brown Decl. Ex. 3 at 448:25-449:3. The Divisional leaders also compose a list after receiving the cross-ruffer list. These lists are then presented to Firm leadership, which decides how many EMDs to promote in total that year, and in which locations and businesses they should be. Firm leadership does not, however, decide which individuals will be promoted. *See*



Brown Decl. Ex. 5 at 233:3-17; Brown Decl. Ex. 7 at 229:24-230:3, 231:15-19; Brown Decl. Ex. 3 at 453:13-17, 454:17-455:2.<sup>14</sup>

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Plaintiffs claim that Dr. Farber's studies of these processes provide evidence of commonality — to establish that women at Goldman Sachs are commonly affected by these processes no matter where they work, no matter what they do for a living, and no matter how well they perform in their jobs. Dr. Farber's flawed studies not only fail to establish commonality, they fail even to address it.

## II. STANDARDS OF ADMISSIBILITY

Under Federal Rule of Evidence 702, an expert's testimony is admissible only if: (a) it will "assist the trier of fact;"<sup>15</sup> (b) it is based on a fair rendition of the facts of the case<sup>16</sup>; (c) it is premised on "sound science," subject to "objective, independent validation"<sup>17</sup>; and (d) the expert

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<sup>14</sup> Plaintiffs claim that "Goldman has maintained common . . . promotion procedures throughout the Class period" (Pl. Br. at 1). That assertion is difficult to reconcile with Plaintiffs' decision to limit their promotions claim to the period ending in 2008. Plaintiffs truncated their promotions claim, not because Goldman Sachs' promotion *procedures* changed in 2008, but because, they assert, "there were no promotions across the Class divisions in 2009" (Pl. Br. at 12 f.46). That is wrong; the only thing that changed in 2009 was the Firm's fiscal year, and so the 2009 promotions were announced early in 2010. Plaintiffs also make the bald and unsubstantiated assertion that the purported systemic impacts "changed after Plaintiffs commenced this litigation" (*Id.*). But again, this contention is irreconcilable with the premise that women at Goldman Sachs are disadvantaged by "discriminatory promotion *procedures*," which did not change.

<sup>15</sup> *United States v. Rahm*, 993 F.2d 1405, 1413 (9th Cir. 1993); *see also Wilson v. Muckala*, 303 F.3d 1207, 1219 (10th Cir. 2002); *Elsayed Muhktar v. Cal. State Univ., Hayward*, 299 F.3d 1053, 1063 n.7 (9th Cir. 2002); *United States v. Frazier*, 387 F.3d 1244, 1262 (11th Cir. 2004).

<sup>16</sup> *See* Fed. R. Evid. 702; *General Elec. Co. v. Joiner*, 522 U.S. 136, 144-45 (1997).

<sup>17</sup> *Daubert v. Merrell Dow Pharm. Inc.*, 43 F.3d 1311, 1317 (9th Cir. 1995) ("*Daubert II*")

has reliably applied those “sound” scientific principles and methods to the facts of the case.<sup>18</sup>

Given these “exacting standards,” the Court “*must . . . exclude proffered . . . evidence under Rules 702 and 403 unless [it is] convinced that it speaks clearly and directly to an issue in dispute in the case.*” *Daubert v. Merrell Dow Pharm., Inc.*, 43 F.3d 1311 at 1321 n.17 (9th Cir. 1995) (“*Daubert II*”).<sup>19</sup>

### III. DR. FARBER’S STUDIES ARE INADMISSIBLE

#### A. An Expert Opinion That Is Not Based On The Facts Of The Case Is Inadmissible

The utility of a statistical model depends “on how accurately the model mimics the actual factors influencing the dependent variable.” *Sobel v. Yeshiva Univ.*, 839 F.2d 18, 22 (2d Cir. 1988) (compensation discrimination case). Accordingly, a statistician’s “starting point” has to be a firm understanding of the factors that legitimately influence outcomes in the process being studied. *Bickerstaff v. Vassar Coll.*, 196 F.3d 435, 439 (2d Cir. 1999). Only by “identifying

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<sup>18</sup> See Fed. R. Evid. 702. See also *Cano v. Continental Airlines Inc.*, 193 F. App’x 664, 666 (9th Cir. 2006) (“Appellants did not show that [the expert] reliably applied scientific principles and methods to the facts of this case.”).

<sup>19</sup> This standard applies to the class certification inquiry. See *Comcast v. Behrend*, 133 S.Ct. 1426, 1434-35 (2013); *In re Initial Public Offering Sec. Litig.*, 471 F.3d 24, 42 (2d Cir. 2006) (court must assess “all *relevant* evidence admitted at the class certification stage” including the probative value of any offered expert testimony) (emphasis added); *Floyd v. City of New York*, 283 F.R.D. 153, 166 (S.D.N.Y. 2012) (*Wal-Mart Stores, Inc. v. Dukes*, 131 S.Ct. 2541, 2551, 2560 (2011) “strongly suggested” a *Daubert* inquiry was required at class certification, and consequently conducting a “rigorous” and “detailed” review of the expert’s “qualifications and methodology”); see also *Messner v. Northshore Univ. Healthsystem*, 669 F.3d 802, 812-13 (7th Cir. 2012) (*Daubert* ruling was required for expert’s testimony critical to class certification); *Ellis v. Costco Wholesale Corp.*, 657 F.3d 970, 982 (9th Cir. 2011) (post-*Dukes*, *Daubert* analysis is appropriate at class certification stage).

[the] legitimate criteria that affect the decision making process [can a statistician] make predictions about what benefits [of employment] similarly situated employees should ideally receive, and then . . . measure the difference between the predicted treatment and the actual treatment of those employees.” *Ottaviani v. State Univ. of New York at New Paltz*, 875 F.2d 365, 367 (2d Cir. 1989).

Conversely, regression analyses that do not account for the “major” and “legitimate criteria that affect the decision making process” are inadmissible. *Bickerstaff*, 196 F.3d at 449 (affirming district court’s rejection of regression studies that omitted major variables); *Ottaviani*, 875 F.2d at 375 (same).<sup>20</sup> Dr. Farber’s studies fail that test.

#### **B. Dr. Farber Ignored the Undisputed Record**

A statistical analysis of an employment process must “accurately reflect the process it seeks to replicate”<sup>21</sup> in order to be admissible. Dr. Farber’s work, however, reflects a pervasive disinterest in the Goldman Sachs processes he purports to study. For example:

- Dr. Farber never read the Rule 30(b)(6) designee depositions that explained the compensation process; instead he “skimmed a couple of them . . . literally just looking for things.” See Brown Decl. Ex. 2 at 64:22-24.

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<sup>20</sup> See also *Raskin v. Wyatt Co.*, 125 F.3d 55, 65-68 (2d Cir. 2007) (affirming exclusion of evidence because expert did not “attempt to account for possible causes” of disparity other than discrimination); *Fisher v. Vassar Coll.*, 70 F.3d 1420, 1447 (2d Cir. 1995) (district court’s reliance on plaintiff’s statistics was “clear error”; “Absent a legally and statistically meaningful comparison between men and woman, similarly situated, plaintiffs’ statistics carry no weight”); *Freeland v. AT&T Corp.*, 238 F.R.D. 130, 148-49 (S.D.N.Y. 2006) (antitrust case) (“[f]ailure to include a major explanatory variable that is correlated with the variable of interest in a regression model may cause an included variable to be credited with an effect that actually is caused by the excluded variable”; because “at least two significant variables have been omitted from [plaintiffs’ expert’s] regression analysis,” plaintiffs’ studies were “essentially worthless”); see also *People Who Care v. Rockford Bd. of Educ.*, 111 F.3d 528, 537 (7th Cir. 1997) (statistical study that “fails to correct for salient explanatory variables” is irrelevant because it “has no value as causal explanation”).

<sup>21</sup> *EEOC v. Sears, Roebuck & Co.*, 628 F.Supp. 1264, 1288 (N.D. Ill. 1986); see also *Morgan v. UPS*, 380 F.3d 459, 469 (2004).

- In this cursory review of the depositions, Dr. Farber never identified the “particular organizational structure” used at Goldman Sachs for making decisions on compensation. *Id.* at 107:5-10.
- Dr. Farber did not identify (and thus did not consider) the factors that managers at Goldman Sachs take into account in making recommendations for compensation. *Id.* at 244:17-23 (“Q: [Y]ou agree that there are many various factors that managers may take into account with respect to some subset of the entire population that you haven’t taken in account, correct? A: I agree there are factors I’ve not considered, yes.”)
- Dr. Farber did not personally review any of the databases on which his work relies, did not know what the databases contained, and did not understand how the data in the case related to the compensation process. *Id.* at 73:14-15 (“A: It is correct to say that I have not seen these databases in their raw form”); 76:24-77:5. Instead, Dr. Farber asked his staff to review the available fields and pull “what *they* felt were the relevant fields.” *Id.* at 77:18-24 (emphasis added).
- Dr. Farber did not know about the different types of employees at Goldman Sachs and how their pay may differ based on their function or role. *Id.* at 219:16-220:6 (“Q: What is your understanding of the employees at Goldman Sachs who were called strats. Do you know who they are? A: No. . . . I was hoping you were going to tell me what a strat was”); see *also* 217:21-219:11 (unaware of relationship between managerial responsibility, client contact and pay; “I’ve not studied that”).<sup>22</sup>
- Dr. Farber had, but did not know he had — and therefore never reviewed — the Managing Director selection database (containing information regarding the process of nominating Vice Presidents to be promoted to EMD). *Id.* at 59:8-11; 91:21-92:4.

Because Dr. Farber made no effort to understand the relevant data or the processes that produce them, the studies he proffers inevitably fail to account for factors that *indisputably* influence the outcomes he studies.

# **1. Dr. Farber Fails to Account for Business Unit In His Regression Studies**

For performance evaluation and pay, the Business Unit is the key decision-making unit at Goldman Sachs. Manager Quartile decisions are made by managers within the Business Unit

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<sup>22</sup> In the population Dr. Farber studied, there are more than 800 “strats” (employees who develop quantitative and technological techniques to solve complex business problems), but he had no idea what they do, and did not “study” the question. See Brown Decl. Ex. (Farber Dep. at 219:25-220:6).

and then vetted with other managers within the Business Unit to ensure consensus as to relative employee contribution.<sup>23</sup> With respect to compensation, budgets (or “bonus pools”) are allocated to Business Units based on their contribution to the Division and the Firm as a whole; employees are paid from — and only from — the funds allocated to their Business Unit. *See* Brown Decl. Ex. 3 at 58:21-25.

At his deposition, Dr. Farber acknowledged that an employee’s Business Unit *could* explain disparities in pay,<sup>24</sup> but *he never tried to account for Business Unit in any of his studies*. *See* Brown Decl. Ex. 2 at 103:22-23 (“I didn’t control for department, desk or business unit”). This is not surprising; Dr. Farber testified he did not even understand what a Business Unit was:

Q: You don’t recall reading deposition testimony that an organizational unit called the business unit was . . . the level at which budget was allocated for compensation purposes?

A: I don’t have a specific recollection of that, no.

Q: [Y]ou don’t have any recollection of any particular organizational structural level at which money was allocated for compensation decision-making; is that correct?

A: That’s correct.

\* \* \* \*

A: I’m not sure I understand what you mean by business unit.

Q: Business unit is an organizational level at which the budgets are allocated for compensation setting. So –

A: Can you give me an example?

Q: Sure. America’s One sales.

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<sup>23</sup> *See* Brown Decl. Ex. 7 at 84:23-85:2 and 104:11-105:1.

<sup>24</sup> *See* Brown Decl. Ex. 2 at 131:12-14.

A: Okay. That doesn't help.<sup>25</sup>

**2. Dr. Farber Fails to Account for Production In Any of His Regression Studies**

For more than a third of the population Dr. Farber studied, success is defined, in significant part, by their “production” — the trades they make, the sales they close, the value of the deals on which they work, the value of the funds they manage, the profit realized on the investments they make, or the loss associated with their “desks.” For those employees for whom individual production metrics are kept, the metrics are significant variables in determining compensation. *See* Brown Decl. Ex. 10 at 16; Brown Decl. Ex. 7 at 75:25-76:1 and 78:2-4. The record also establishes unequivocally that, where production metrics are available and relevant to the employee's role, they are a central input into the Manager Quartile process.<sup>26</sup>

Yet Dr. Farber ignores these data in his studies. When asked about this, he said that he would only have been willing to use production data if it were available “across all workers” in the putative class:

Q: And why didn't you decide to study the subset of employees for whom there was production data [available] separately from the others?

A: Because I was interested in a measure of the pay difference at the class-wide level, and I wasn't — I didn't want to be involved in doing an analysis for a subgroup that I couldn't then say, okay, I can now do the same thing for the rest of the . . .

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<sup>25</sup> Later, after having admitted that he did not understand the importance of the Business Unit to Goldman Sachs' processes, Dr. Farber sought to rationalize his failure to account for them by asserting that they are “unstable,” *i.e.*, the composition and contours of the Business Units could change from year to year. *See* Brown Decl. Ex. 9 at 42. The fact that studying a variable may complicate an analysis or require more work does not justify omitting the variable altogether, particularly when that variable plays such a significant role in the question being studied. *See* Brown Decl. Ex. 2 at 107:10-22 and 228:13-20.

<sup>26</sup> *See* Brown Decl. Ex. 12J; Brown Decl. Ex. 12K; Brown Decl. Ex. 7 at 344:11-345:2.

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A: The population as a whole [is what] I'm interested in. I can't just have a productivity measure for some subset of them.<sup>27</sup>

Thus, it did not matter to Dr. Farber whether production was a central factor affecting outcomes for a sizeable portion of the class, or whether using it in his regressions might have explained any gender differentials he claims to have found; he chose not to use this factor in any of his studies because he had determined to ignore *any* factor — no matter how important — that might only be available for portions of the class:

Q: [Y]ou testified previously that you . . . only [studied] factors in your pay regression that applied to the whole group. But do you understand that there might be many factors that would explain pay for a variety of individuals that aren't common to the whole group?

A: I understand that there could be factors that are specific to subgroups of workers, yes.

Q: And you decided to forego looking into whether those explained gender difference in those groups, correct?

A: That's correct.<sup>28</sup>

It makes no sense to ignore production at a financial firm, especially when the *undisputed* record evidence establishes its importance. Production data is a significant factor — in many instances the *most* significant factor — in performance evaluation, compensation, and promotion decisions for a substantial portion of the putative class. *See* Brown Decl. Ex. 11 at 40; Brown Decl. Ex. 10 at 16. Dr. Farber simply chose not to include this variable in his models. His decision is akin to refusing to use available productivity data for workers on a manufacturing

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<sup>27</sup> See Brown Decl. Ex. 2 at 122:14-18; 134:7-20.

<sup>28</sup> See Brown Decl. Ex. 2 at 206:21-207:11.

floor — whose compensation is driven largely by their output — because no similar data are available for employees in the executive suite.

**3. Dr. Farber Failed to Account Meaningfully For Employee Role or Function in Any Of His Regression Studies**

Plaintiffs' putative class includes employees serving in virtually every revenue-producing role that could exist at a financial firm like Goldman Sachs, including:

- An expert in computer science who writes software used to execute electronic trades. *See* Brown Decl. Ex. 11, Appendix E (Declaration of [REDACTED])
- A trader in the Equities sub-Division who works on the floor of the New York Stock Exchange. *Id.*, Appendix E (Declaration of [REDACTED])
- An expert on the healthcare industry that counsels clients in that field on how to mitigate risk related to currency issues outside the United States. *Id.*, Appendix E (Declaration of [REDACTED]).
- Market researchers who analyze historical economic data and provide advice to individuals on the trading “desks” about market trends and trading “signals” — exogenous economic factors and events that could turn a market. *Id.*, Appendix E (Declaration of [REDACTED])
- A commission-based sales employee who sells mutual funds directly to Goldman Sachs clients. *Id.*, Appendix E (Declaration of [REDACTED])

Dr. Farber testified that he *thought* he was accounting for job function or role in his studies when he used a field in the database reflecting an Affirmative Action Plan (“AAP”) job group code in his models, but at his deposition, Dr. Farber admitted he did not understand what these “AAP job groups” meant at Goldman Sachs. *See* Brown Decl. Ex. 2 at 110:5-11 (“I never really had a satisfactory — I never really — never managed to find a satisfactory description of what the job groups actually were. They were numeric codes, but I don’t — I couldn’t tell you what any code was.”).

In fact, the AAP job group code has no bearing on pay, performance evaluation, or promotion decisions at Goldman Sachs, and, at least with respect to compensation, *Dr. Farber*



*admitted that he had no reason to believe that it did.*<sup>29</sup> Rather, those job groupings are exceptionally broad generic occupational classifications used for certain mandatory governmental reporting purposes. The codes are so broad that the three most populous job groups (AAP job groups 201, 202, and 401) cover about *70% of the entire population Dr. Farber studied*. See Brown Decl. Ex. 13 at ¶ 6. By using these job groups, Dr. Farber did nothing to account for the functions performed by the individuals he studied.

Goldman Sachs produced data that actually *do* reflect differences in job functions, but Dr. Farber admitted that he was unaware of that fact. See Brown Decl. Ex. 2 at 112:7-9 (“Q: Are you familiar with a field called job function? A: No.”; 112:14-17 (“[A]re you familiar with the levels of position in PeopleSoft, such as Level 6, 7, 8, 9? A: No.”). By itself, Dr. Farber’s decision not to investigate and use the *relevant* data, and instead to use *irrelevant* data he did not understand renders his work unsound and thus inadmissible.<sup>30</sup>

#### 4. **Dr. Farber Fails to Account For Any Measures of Employee Performance In His Promotion Studies**

Not surprisingly, the *undisputed* record testimony establishes that promotions generally go to those who are particularly good at what they do — that performance is a key factor in the promotion calculus.<sup>31</sup> Inexplicably, however, Dr. Farber fails to account for employee

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<sup>29</sup> See Brown Decl. Ex. 2 at 138:3-9 (“Q: And you’re not aware of any testimony in the record or any documents in the record that suggests that affirmative action plan groups are used or connected in any way to compensation setting at Goldman Sachs, are you? A: That’s correct.”)

<sup>30</sup> See *Anderson v. Westinghouse Savannah River Co.*, 406 F.3d 248, 262-263 (4th Cir. 2005) (rejecting analyses where the plaintiffs’ expert attempted to control for the kind of work performed by putative class members by relying on broad, generic “EEO job groupings” in the defendant’s database”).

<sup>31</sup> See Brown Decl. Ex. 7 at 237:22-238:2 and 245:6-8; Brown Decl. Ex. 3 at 428:14-19; Brown Decl. Ex. 5 at 236:21-25.

performance in any way in his promotion studies. *See* Brown Decl. Ex. 8 at Table 20. The use of the word “inexplicable” in this context is not lawyer’s hyperbole:

Q: And you don’t have any performance measures or – or assessment in this [promotion] analysis do you?

A: That’s correct.

Q: And wouldn’t you think that performance and productivity related factors would be related to rates of promotion?

A: I don’t know . . . I could have included the performance evaluations like I did in some of the models for pay, but I didn’t.

Q: Can you explain why you didn’t?

A: Well, I don’t have a strong reason to use it or not to use it. Anyway, I didn’t use it.<sup>32</sup>

**C. The Variables Dr. Farber Excluded Are Not “Tainted”**

Seeking to justify his decision to exclude from his analyses certain factors that *undeniably* are directly tied to the processes he claimed to be studying. Dr. Farber testified that he does not use any factor that he thinks “might” be “tainted” because it was within the control of the employer.<sup>33</sup> But Dr. Farber did nothing to determine whether any of these omitted variables were, in fact, “tainted,” and he points to no evidence that they are:

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<sup>32</sup> *See* Brown Decl. Ex. 2 at 143:21-144:15. As it turns out, had Dr. Farber included Manager Quartile — a key factor relevant to the likelihood of being promoted — his reported results would not have been statistically adverse to women. *See* Brown Decl. Ex. 11 at 49.

<sup>33</sup> *See* Brown Decl. Ex. 2 at 112:18-113:9, 117:9-12, 172:21-24; Brown Decl. Ex. 9 at 42 (acknowledging that Dr. Michael Ward, Defendants’ statistical expert, controls for Business Unit in his analysis of compensation but stating incorrectly, “[g]iven that Goldman determines assignment to specific business units, business unit is a potentially tainted variable.”). Individuals applying to Goldman Sachs are specifically told to “specify all your location/division preferences at the time of application submission.” *See, e.g.,* <http://www.goldmansachs.com/careers/students-and-graduates/our-programs/americas->

A: [A]ssignment to desk is not necessarily random and, again, could be a tainted variable.

Q. You didn't have any evidence that assignment to desk was tainted in this case, did you?

A. No

Q. And you're not aware of any allegation that — that assignment to desk — was sex discriminatory that you were asked to explore, were you?

A. That's correct.

\* \* \* \*

Q. You didn't do any taint analysis of any of the processes or criteria that are used at Goldman Sachs to set compensation or make promotion decisions, did you?

A. I don't know what you mean by a taint analysis.

Q. Well, any analysis that would lead you to eliminate a factor in your equation based on the fact that it was tainted, as you've used the word?

A. It's a very hard thing to do, but I did not do any of those analyses.

Q: And you don't have any opinion on whether the assignment of job code is [actually] tainted, do you?

A: No. No, I don't. I chose not to use it.<sup>34</sup>

*See, Brown Decl., Ex. 2 at 177:21-178:10.*

The Second Circuit has held that a statistical expert cannot ignore highly relevant variables on the mere supposition that they “may be” tainted.<sup>35</sup> Dr. Farber does not demonstrate

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programs/new-analyst-copy.html. There is no record evidence that the Firm unilaterally assigns individuals to Business Unit and, in fact, it does not.

<sup>34</sup> *Id.* at 206:16-20.

<sup>35</sup> *See Ottaviani*, 875 F.2d at 372-73 (plaintiffs were required to show that academic rank was a “tainted” variable before omitting it from analysis); *see also Morgan v. UPS*, 380 F.3d 459, 470

— indeed, he chose not even to examine — whether any of the factors he excluded were in any way “tainted.” He had no basis for excluding these highly relevant factors, and their exclusion renders his studies unreliable.

**D. Dr. Farber’s Aggregated Studies Fail To Address Any Issue Relevant At This Stage Of The Proceeding**

Even if the critical foregoing errors did not exist, Dr. Farber’s studies would still be inadmissible because *by design* they do not address any relevant inquiry at this stage of the case. Rule 23(a)(2) requires that Plaintiffs show that “there are questions of law or fact common to the class” — *i.e.*, that those in the putative class in this case experienced *common* results with respect to the evaluation, compensation, and promotion processes that they challenge. Dr. Farber’s studies fail even to address that question, let alone provide probative evidence of it.

**1. Dr. Farber’s Models Fail Standard Statistical Tests**

As described above, Dr. Farber combines for analysis facially disparate populations — Investment Bankers and Securities traders, experts in software, healthcare and currency exchanges, and laterals bid away from other firms at market premiums and “home grown” talent. Sometimes, seemingly disparate groups like this are nonetheless similar enough in relevant respects to permit them to be combined in a single analysis — but no statistician applying reliable principles and methods would *assume* that to be the case without first testing that proposition. Dr. Farber did not do so.

The “Chow” test has been used by statisticians for decades to determine whether the impact of the factors affecting outcomes in a given personnel process are sufficiently similar for

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(8th Cir. 2004) (plaintiffs’ expert did not consider prior pay in his regression model because he claimed it might be tainted; court rejected resulting analysis because there was no evidence that past pay disparities were, in fact, discriminatory).

two (or more) seemingly disparate groups that they can properly be combined in a single statistical model. Dr. Farber ignored this universally-accepted standard test,<sup>36</sup> with fatal results.

Goldman Sachs' expert, Dr. Michael Ward, performed the Chow test, and the test *rejected* the notion that employees in all Divisions could be combined in the same model for purposes of the processes Dr. Farber studied — the 360 review, Manager Quartile, promotion and pay — and it also rejected combining lateral and non-lateral hires in the same pay model. *See Brown Decl. Ex. 10 at 10.*<sup>37</sup> The Chow test results dictated: (a) separate models for Associates and Vice Presidents for all analyses (Dr. Farber eventually did this in his rebuttal report); (b) separate models for each of the Divisions for his performance evaluation, pay, and promotion studies<sup>38</sup>; and (c) separate models for lateral hires and employees promoted from within the Firm for his pay models.<sup>39</sup>

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<sup>36</sup> *See Brown Decl. Ex. 2 at 135:12-137:21.*

<sup>37</sup> Under the Chow test, “p-values” above 0.05 indicate that the group(s) can be combined in a single model. P-values below 0.05 indicate that the groups cannot be combined in a single model. For each test that Dr. Ward performed on Dr. Farber’s regression models, the p-value that he calculated was *smaller than 0.0002*. *See Brown Decl. Ex. 10 at 10.*

<sup>38</sup> Although the Business Unit is a critical factor in the way in which rewards are distributed, separate regression analyses at the Business Unit level are impractical because some Business Units are small (or lack a sufficient number of people of one gender) so they would not yield statistically meaningful results. Therefore, in an effort to reconcile the optimal statistical methodology with the numerical reality, Dr. Ward entered Business Unit into his regression analyses as a control, and performed the analyses by Division, title (i.e., Associate or Vice President), and type of hire. This effectively captures the impact of the Business Unit on compensation within the regression analyses.

<sup>39</sup> As noted above, employees recruited as lateral hires negotiate compensation packages based on very specific talents and work experiences, and the market factors at play when they were recruited. “Home grown” employees who are hired off of college campuses have no comparable market power. Dr. Farber admitted that this distinction “could affect the gender differential” he claims to have identified (and the data show that it does), but he did not do a separate analysis of that question as the Chow test requires. *See Brown Decl. Ex. 2 at 239:6-240:3.*

Dr. Farber does not, and could not, disagree with these Chow results. Even *after* Goldman Sachs' expert Dr. Ward identified this fundamental failing in Dr. Farber's work, Dr. Farber never performed (or, at least, never reported the results of) the test. Because Dr. Farber refuses to use this commonplace and universally accepted statistical test (or any other possible methodology) to determine whether his all-in-one aggregation approach is sound, his models are inconsistent with the standards of his profession, are not premised on "sound science," and are not subject to "objective, independent validation."<sup>40</sup>

**2. By Design, Dr. Farber's Studies Cannot Provide Relevant Evidence On The Subject Of Commonality**

The issue currently before the Court is whether Goldman Sachs' evaluation, compensation, and promotion processes had a common effect on all of the women in the putative class. To produce reliable studies on the question of class homogeneity statistically, an expert would have to examine results in relevant sub-groups in the analyzed population, comparing them to one another to determine whether consistent patterns exist.

Suppose, for example, one wanted to study the pattern of wealth distribution in a country. One could compute the aggregate net worth of everyone living in the country and divide that figure by the total population; this would yield an aggregated average of wealth per person within the country, but it would say nothing about whether this average wealth was common. If one wanted to answer *that* question — whether there was a common pattern of wealth across the residents of the country — the investigator would have to analyze much smaller economic units such as states, counties, cities or neighborhoods and then compare them.

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<sup>40</sup> *Daubert II*, 43 F.3d at 1317.

Dr. Farber's analyses are akin to the country-wide average in this example. He presents no studies that would allow the Court to determine whether there is a *common pattern* across the putative class — whether “deficits” in 360 scores, Manager Quartile placements, pay or promotion occur commonly in the various businesses, or, conversely, whether the differences he observed were coming from a handful of businesses and then averaged across the entire population. Dr. Farber merely concludes (incorrectly, as will be shown) that women did less well *on average across the class*. That has nothing whatever to do with the relevant class question posed by Plaintiffs' Motion.

Indeed, Dr. Farber testified at his deposition that he *never even considered* looking for patterns of common treatment or impact across the putative class; he was only interested in reporting aggregate results *at the class-wide level*:

A: I was interested in a measure of the pay difference at the class-wide level, and I wasn't — I didn't want to be involved in doing an analysis for a subgroup that I couldn't then say, okay, I can now do the same think [sic] for the rest of the . . .

Q: So your methodology here was to put the entire population into one equation, correct?

A: Yes.

Q: Okay. So, you didn't do any separate models by division, did you?

A: That's correct, I did not do any separate models by division.

\* \* \* \*

Q: Now, in your — by doing your model with the entire population together, *you are assuming that* . . . there's only one affect [sic] for each variable that operates for all the employees on average, correct?

A. That's correct.<sup>41</sup>

Dr. Farber's approach is results-driven: he admitted that using separate models for different subgroups would have changed his results. *See* Brown Decl. Ex. 2 at 202:16-18. But he disclaimed any intention of studying segments of the class to test the commonality hypothesis: "I told you I did not — I did not consider running separate analyses for different subgroups of workers. I just did not consider that." *Id.* at 165:12-15 (emphasis added). The aggregated "average" differences reported by Dr. Farber mask — by design — wide variations in outcomes from Division to Division and from Business Unit to Business Unit, and thus say nothing about the existence of any common question.<sup>42</sup>

### 3. **The Courts Have Properly Rejected Aggregated Statistical Analyses Like Dr. Farber's When Offered To Show Commonality**

The Supreme Court rejected Dr. Farber's type of flawed, aggregated approach in *Dukes* as irrelevant to class certification. There, the plaintiffs offered statistical analyses of compensation and promotions nationally and by region, rather than by store (where the allegedly discriminatory decisions were made). The Supreme Court held that:

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<sup>41</sup> See Brown Decl. Ex. 2 at 134:11-135:7, 202:5-10.

<sup>42</sup> Had Dr. Farber analyzed whether a common pattern of treatment existed, he would have found none. For example, when Dr. Farber's (flawed) results are reported at the Business Unit level — the level at which the relevant decisions are made — the data show an enormous variation in results. In 42% of the Business Units covered by Dr. Farber's studies, women are *avored* in pay over men. In others, men are favored, but in 75% of all Business Units, the pay differences are statistically gender neutral (in other words, within the range that would be expected by chance). *See* Brown Decl. Ex. 10 at 1, 6. This result is not based on any complex statistical analysis that might be affected by, e.g., sample size, as noted above. These results were generated simply by counting "plusses" and "minuses" based on Dr. Farber's own results. The same is true with respect to Dr. Farber's performance evaluation studies. Had he analyzed whether a common pattern of treatment existed across Business Units, he would have found that women do *better* than men with respect to 360 reviews and Manager Quartile assignment in more than 30% of the Business Units in the population Dr. Farber studies. *See id.* at 1, 7-8.



[i]nformation about disparities at the regional and national level does not establish the existence of disparities at individual stores, let alone raise the inference that a company-wide policy of discrimination is implemented by discretionary decisions at the store and district level. A regional pay disparity, for example, may be attributable to only a small set of Wal-Mart stores, and *cannot by itself establish the uniform, store-by-store disparity upon which the plaintiffs' theory of commonality depends.*

*Wal-Mart Stores, Inc. v. Dukes*, 131 S. Ct. 2541 2555 (2011) (internal citation omitted; emphasis added); *Dukes v. Wal-Mart Stores, Inc.*, 964 F. Supp. 2d 1115, 1120 (N.D. Cal. 2013) (“elevating the level of analysis [above the store level] runs afoul of the Supreme Court’s objection to [Plaintiffs’] statistics: district-level disparities may or may not reflect consistent results across stores, which was the level where support managers were actually selected.”).

Similarly, in *Bolden vs. Walsh*, 688 F.3d 893, 896 (7th Cir. 2012), the Seventh Circuit expressly rejected this sort of aggregated statistical evidence when offered to show commonality.

The sort of statistical evidence that plaintiffs present has the same problems as the statistical evidence in *Wal-Mart*: *it begs the question [of commonality]*. Plaintiffs’ expert . . . *assumed* that the appropriate unit of analysis is all of Walsh’s Chicago-area sites. *He did not try to demonstrate that proposition.* If Walsh had 25 superintendents, 5 of whom discriminated in awarding overtime, aggregate data would show that black workers did worse than white workers — but that result would not imply that all 25 superintendents behaved similarly, so it would not demonstrate commonality.<sup>43</sup>

Just like the experts in *Dukes* and *Bolden*, Dr. Farber *assumes* commonality across the putative class rather than looking to see if it actually exists. By failing to offer any studies that might bear upon the existence of a common pattern across the studied population, he rendered his studies irrelevant to the issue of commonality.<sup>44</sup>

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<sup>43</sup> Emphasis added.

<sup>44</sup> See *Tabor v. Hilti, Inc.*, 703 F.3d 1206, 1229 (10th Cir. 2013) (rejecting plaintiffs’ expert’s statistical evidence; “Even if Plaintiffs’ statistical evidence demonstrates (at least facially) that this haphazard policy caused an *overall* disparate impact on women, Plaintiffs have not shown


#### IV. CONCLUSION

For the foregoing reasons, Goldman Sachs respectfully requests that the Court grant its Motion to Strike the Opinion and Testimony of Plaintiffs' Expert, Dr. Henry Farber.

Dated: Washington, D.C.

June 13, 2014

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that the facts and circumstances involved in Hilti's promotion choices are common across the class of female employees.") (emphasis added)); *see also Barrett v. Option One Mortg Corp.*, No. 08-10157-RWZ, 2012 WL 4076465, at \*3 (D. Mass. Sept. 18, 2012) ("Plaintiffs' statistical analysis shows that on average, nationwide, African-American borrowers pay more for their loans than white borrowers. But that is no longer sufficient to establish commonality"); *Cooper v. Southern Co.*, 390 F.3d 695, 740 (11th Cir. 2004) (criticizing statistics "using company-wide data that did not reliably identify discrimination within designated segments of the workforce"), *overruled on other grounds, Ash v. Tyson Foods, Inc.*, 546 U.S. 454, 457 (2006).

UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK

**H. CRISTINA CHEN-OSTER; LISA PARISI; and  
SHANNA ORLICH,**

**Plaintiffs,**

**vs.**

**GOLDMAN, SACHS & CO. and THE GOLDMAN  
SACHS GROUP, INC.**

**Defendants.**


**10 Civ. 6950 (AT) (JCF)**

**CERTIFICATE OF SERVICE**

I hereby certify that on June 13, 2014, I caused the foregoing Declaration of Barbara B. Brown in Support of Motion to Strike Reports, Opinion, and Any Testimony of Plaintiffs' Expert Dr. Henry S. Farber to be served on the following attorneys of record, by electronic mail and by U.S. Mail:

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